

REMARKS

Claims 9, 10, 17, 20, 23-33, 37, 42 and 51 are amended. Claims 1-51 are in the application for consideration.

The specification is amended at page 9 to delete reference to "substrate 10" to be consistent with amendments made in Applicant's last-filed Office Action Response. Entry of the same is requested.

Certain claims are amended to insert more preferred and grammatically correct hyphenation. Further, claims 24-29 are amended to insert more clear antecedent basis regarding chamber pressure. Entry of the same is requested. Absolutely no change in scope occurs by any of these amendments, and such amendments do not go to patentability.

Applicant's independent claim 1 recites reducing partial pressure of the oxidizer and the reducer within the chamber by the act of flowing an inert gas to the chamber while chamber pressure and chamber temperature are at or above those of the conditions during the exposing. Such claim is rejected over a combination of Joo et al. in view of Storbeck et al. and Miner et al. Applicant disagrees and requests reconsideration.

Joo et al. teaches stopping of its selective oxidation by stopping the flow of the oxidation process gases to the chamber and decreasing temperature. Nothing else of significance is provided by Joo et al. as to what occurs after its selective oxidation process. The Examiner asserts on page 3 of the last Office Action that it is implied that there would still be some flow of nitrogen apparently during the oxidation processing and

perhaps thereafter at least because the word "comprising" is used. Regardless and even assuming the Examiner is correct, under no conceivable stretch of the imagination does Joo et al. teach the claim 1-recitation of reducing partial pressure of the oxidizer and the reducer within the chamber by the act of flowing an inert gas to the chamber while chamber pressure and chamber temperature are at or above those of the conditions during the exposing. Even if nitrogen is flowing during the oxidation and immediately thereafter, there is no teaching or suggestion that an act of flowing any such nitrogen is used to accomplish Applicant's claim 1-recited partial pressure-reducing. Accordingly, Joo et al. in no way discloses or suggests this facet of Applicant's independent claim 1.

The Examiner then asserts that Storbeck et al. discloses that nitrogen is flowed through the reaction chamber during the reduction of temperature of the wafer. Applicant does not dispute such, but such does not encompass Applicant's claim-recited reducing partial pressure of the oxidizer and the reducer within the chamber by the act of flowing an inert gas to the chamber while the chamber pressure and chamber temperature are at or above those of the conditions during the exposing. Teaching of inert gas flow through the reaction chamber during the reduction of wafer temperature says absolutely nothing about, and doesn't teach anything about, inert gas flow to the chamber when the chamber is at or above the temperature and pressure conditions during the exposing.

Further, Storbeck et al.'s teaching is with respect to that which is depicted in the Fig. 3 processing. Such clearly discloses N_2 flow by itself, and after ceasing of H_2 flow, and further accordingly after the flow of a mixture of H_2 and H_2O has been ceased. Thereby, Fig. 3 does not teach the act recited in Applicant's claim 1 of reducing partial pressure of the oxidizer and the reducer by the act of flowing an inert gas to the chamber since the flow of H_2 and H_2O has already ceased. Accordingly, Fig. 3 of Storbeck et al. teaches partial pressure reduction of H_2 and H_2O by ceasing flow of H_2 and H_2O , not by an act of flowing an inert gas as Applicant recites in claim 1. Even if Storbeck et al. would include some N_2 flow during its oxidation (which is not disclosed by Storbeck et al.), such would in no way teach or imply reduction of partial pressure of an oxidizer and a reducer within the chamber by the act of flowing an inert gas to the chamber, and certainly not while chamber pressure and chamber temperature are at or above those of the condition during the exposing. Claim 1 requires such act of partial pressure reduction with respect to both the oxidizer and the reducer. Such doesn't occur and Storbeck et al., is not suggested in Storbeck et al., and even paragraph [0044] doesn't teach such. Accordingly, Storbeck et al. is lacking in this regard in the same manner which Joo et al. is lacking in this regard.

The Examiner next apparently relies on the paragraph bridging columns 10 and 11 of Miner et al., apparently principally relying on the Miner et al. statement that it is wafer temperature that dictates when the oxidation

reaction stops. In spite of Miner et al.'s teaching in this regard and the Examiner's reliance thereon, Miner et al. still does not teach reducing partial pressure of the oxidizer and reducer within the chamber by the act of flowing an inert gas to the chamber while chamber pressure and chamber temperature are at or above those of the conditions during exposing.

The undersigned believes the Examiner is ignoring the claim 1 recitation regarding chamber temperature being at or above those of the conditions of the previous claim-recited "during the exposing". Further, regardless of whether any continued oxidation occurs after wafer temperature is reduced in Miner et al., chamber temperature is immediately reduced upon turning off of lamps 219 and simultaneous N₂ purge gas introduction. For Miner et al. to read upon the "during the exposing" portion of Applicant's claim 1, Miner et al. would necessarily require at least some period of time for power of lamps 219 to continue prior to introduction of N₂ inert gas to its chamber. There is absolutely no explicit teaching, nor suggestion, of any of such occurring. Further, it is inherent that turning the power off results in immediate temperature reduction at least because Miner et al. state wafer cooling at a rate of 50°C per second. Accordingly, it is inconceivable that there is any perceptible period of time where N₂ flow occurs while chamber temperature is at the previous claim-recited "during the exposing" of Applicant's claim 1.

Therefore, there is no teaching of reducing partial pressure of the oxidizer and the reducer within the Miner et al. chamber by flowing an inert

gas to the chamber while chamber pressure and chamber temperature are at or above those of the conditions during the previously recited act of exposing. Accordingly, Miner et al. is equally lacking in this regard as are each of Joo et al. and Storbeck et al. As each of the references is lacking in this regard, the combination of the three references in rejecting Applicant's independent claim 1 does not encompass all of the features of Applicant's independent claim 1. Accordingly, the Examiner's obviousness rejection in this rejection must be withdrawn, and action to that end is requested.

Applicant's independent claims 1 and 50 also stand rejected as being unpatentable solely over Joo et al. in combination with Miner et al. For the same essential reasons argued above, such combination even in the absence of Storbeck et al. does not encompass all of the limitations of Applicant's independent claim 1. Accordingly, such rejection should be withdrawn and action to that end is requested.

Applicant's independent claim 50 is somewhat analogous to independent claim 1 and recites a gas mixture comprising H₂O and H₂ independent of reducing act/effect. Regardless, Applicant's independent claim 50 requires reducing partial pressure of the H₂O and the H₂ within the chamber by the act of flowing an inert gas to the chamber while chamber pressure and chamber temperature are at or above those of the conditions during the exposing. There is no disclosure or suggestion of the same with respect to the teachings of Joo et al. and Miner et al. essentially for the reasons asserted above. Accordingly, Applicant's independent claim 50 as

worded is allowable over the cited references, and the Examiner's rejection thereof should be withdrawn. Action to that end is requested.

Applicant's independent claims 31 and 51 recite that the oxidizing conditions comprise pressure greater than room ambient pressure. The Examiner asserts that it would be obvious to use "the recited pressure ranges" because pressure is a variable of art which one of skill would have been able to determine. However, each of the Examiner's applied references only refers to atmospheric and/or sub-atmospheric processing. Not one of the cited references is seen to remotely suggest or imply any processing occurring relative to their chambers at pressures greater than room ambient pressure. Absent the Examiner citing and relying upon some reference disclosing chamber pressure greater than room ambient, the under assigned asserts that *prima facie* obviousness with respect to rejection of claims 31 and 51 has not been met. Applicant does not believe it is required to disclose any issue of criticality or otherwise where the Examiner cites no reference which discloses pressurizing a chamber to greater than room ambient, and the Examiner certainly has not met his or her burden in an obviousness rejection regarding independent claims 31 and 51's recitation of acts occurring above atmospheric pressure and then going below room ambient pressure. No collection of the references recites acts occurring above and below ambient room pressure, and accordingly it is inconceivable that any combination of the references could suggest any acts of processing which goes from above room ambient pressure to below room

ambient pressure, and certainly not in the manner which Applicant recites in independent claims 31 and 51. The Examiner's obviousness rejection of these claims should therefore be withdrawn at least for this reason, and action to that end is requested.

Applicant's dependent claims should be allowed as depending from allowable base claims, and for their own recited features which are neither shown nor suggested in the cited art.

An earnest attempt has been made to indicate that this application is in condition for allowance, and action to that end is requested.

Respectfully submitted,

Dated: 12-29-05

By: 

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